Chemical & Engineering NEWS

Congressional voting record on issues of interest to chemists
Page 18

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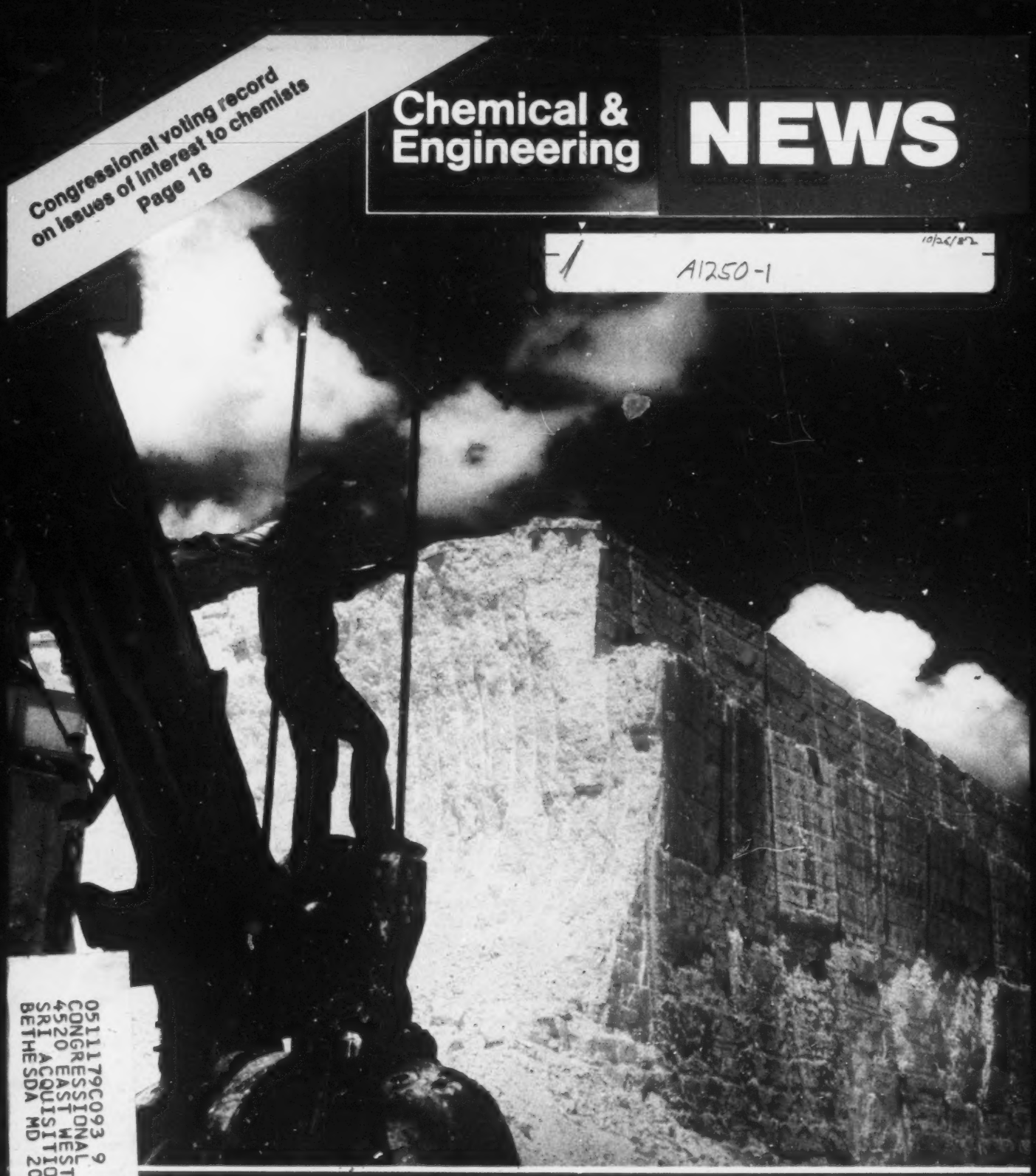

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Mineral inorganics

Sulfur joins the rest in market slide

A Key Chemicals Review Page 9

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Chemical & Engineering NEWS

Cover: Vats of solid sulfur at Freeport-McMoran's facilities at Port Sulphur, Tex.

2 Letters
3 Editor's Page

Concentrates
7 Business
15 Government
24 Science/Technology

The Departments
29 ACS News
30 Awards
40 Newscripts

News of the Week

- ***Nobel prize in chemistry*** *goes to Aaron Klug of U.K.'s MRC Laboratory of Molecular Biology, and in physics to Kenneth G. Wilson of Cornell.* ***Page 4***
- ***Drug approval process up for revamping;*** *FDA proposes a series of revisions that could reduce processing time six months by requiring less review time.* ***Page 5***
- ***Third-quarter earnings*** *at most U.S. chemical companies continue a downward trend; Mexican peso devaluation adds new problems for the industry.* ***Page 5***
- ***Ban on toxaphene,*** *issued by the Environmental Protection Agency, prohibits most uses of this pesticide that replaced DDT and wreaked ecological havoc.* ***Page 6***
- ***New method for transferring genes*** *makes use of certain DNA segments called transposone and opens up the potential for precise experimental control.* ***Page 6***

Business

- ***Major mineral inorganics***—*lime, sulfur, potash, and phosphorus—all are feeling the effects of the current recession, with sulfur the most recent inorganic to join the slump.* ***Page 9***
- ***Loctite's Robert H. Krieble*** *has helped bring his firm up to sales of some $200 million by building on a chemical way to fasten, or lock, nuts and bolts.* ***Page 14***

Government

- ***White House panel recommends changes*** *in food safety laws, including greater use of scientific review and revamping of the Delaney clause.* ***Page 16***
- ***EPA's research and development plans*** *are under fire from their own science advisory board.* ***Page 17***
- ***Voting records of Congressmen*** *on six different bills of concern to chemists are summarized.* ***Page 18***

Science

- ***Highly strained tricyclic molecule*** *is synthesized and shows unusual stability, apparently because possible decomposition pathways are not favored.* ***Page 25***
- ***Ellagic acid is found to inactivate*** *the potent carcinogen benzo[a]pyrene in vitro by forming innocuous adducts.* ***Page 26***
- ***Claims of new water-splitting advances*** *should not be interpreted as commercial breakthroughs, researchers say.* ***Page 27***
- ***Substances that attract coyotes specifically*** *are being sought to control the predators more effectively.* ***Page 27***

Technology

- ***Kodak's new high-speed film,*** *spawned by emulsion technology, offers excellent grain and sharpness.* ***Page 28***

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Sulfur joins mineral inorganics' recession

Long thought to be strong indefinitely in the 1980s, sulfur has yielded to the same market woes afflicting lime, potash, and phosphorus

Bruce F. Greek
C&EN, Houston

Organic chemicals seem to be getting all the attention in this recession, which has slashed production, prices, and new investment. But inorganics such as the four treated here—lime, sulfur, potash, and phosphorus—also have gone into the soup. Recession took longer to reach some of these big inorganics, especially sulfur, but the results are now the same.

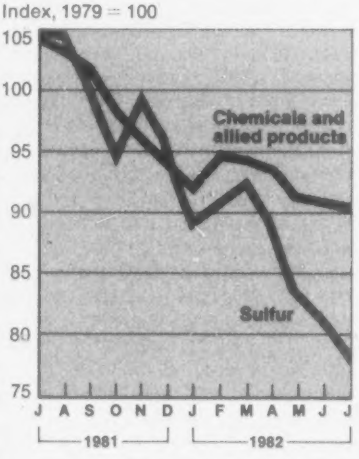
Production in all these inorganics will be down substantially from 1981. Declines expected in 1982 range from 13 to 18% of 1981 production. Total value of sales and captive use for these inorganics will drop over an even broader range, from less than 1% for phosphorus to more than 35% for lime.

The recovery from such depths will not come quickly or easily, industry analysts fear. Although improvement in both demand and value of these inorganics is expected in 1983, recovery to 1981 production levels might be too much to hope for. In fact, the more pessimistic observers pick 1985 for full recovery.

All told, about 29 million tons of these four inorganics will be produced in 1982, with a value of about $2.75 billion. Lime and sulfur account for nearly 90% of combined production volume and two thirds of the value.

So when lime and sulfur slump, the group as a whole has to tumble.

Sulfur output has fallen harder than all chemicals



Source: Department of Interior, Federal Reserve Board

Key Chemicals

Combined output for these two is expected to decline more than 5.5 million tons in 1982, accounting for most of the total volume decline from 1981 production of about 36 million tons. This slump and resulting pressure on prices will chop about $500 million from total commercial value.

The slump in lime began before that in sulfur. Lime's problem comes from heavy dependence on the steel industry as an end use. Since the long-term outlook in steel is very tarnished, prospects for recovery in lime are best called long-term, too, even though lime has better potential growth in demand from newer uses than does sulfur. Even if the market for lime in steelmaking never again reaches 1970s' levels in the U.S., total demand for lime could exceed former highs because of pollution-control uses. These outlets are growing as much as 10% a year and could propel lime to new records by the mid-1980s.

Sulfur's dependence on a single end use in phosphate fertilizer is more extreme and finally has done it in. Fertilizer takes more than 60% of sulfur, almost entirely through sulfuric acid. (Direct-application sulfur and sulfur-containing pesticides account for some additional demand.) So sulfur can't do well again until fertilizer use turns up.

The longer-term outlook for U.S.-produced sulfur is heavily dependent on foreign trade in fertilizers. Problems have arisen this year as both U.S. and foreign fertilizer producers and consumers reduced inventories of phosphate fertilizers. Inventories of sulfur, too, were cut, mainly because of the high cost of money. Rebuilding inventories could take some time in both fertilizer and sulfur, perhaps two years or more. For producers, one result will be only a small rise in sulfur demand to meet export needs.

Exports of sulfur, here being dumped in ship's hold, are down sharply

In other parts of the world, prospects for increased demand for sulfur or sulfur products from the U.S. have dimmed because of competition. An important factor is increased phosphate fertilizer output in North Africa made from by-product sulfur from the Middle East. This fertilizer is being pressed into world markets at low prices to gain hard currencies. Other new fertilizer sources such as Mexico also might take this route to get into developing markets.

Since sulfur is the most dependent of these four inorganics on exports, it has the most confusing outlook over the next few years. But each of these quite mature inorganics will remain under strong downward pressure on demand.

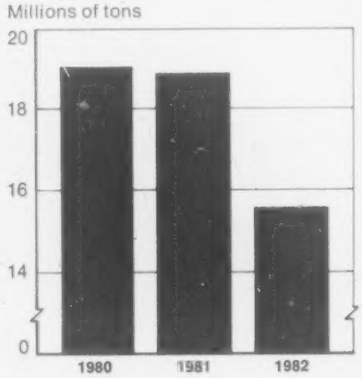
For immediate market details on each of these inorganics, see the following pages.

Lime

CaO

- ***Demand slack***
- ***Capacity excessive***
- ***Prices weak***

PRODUCTION



Note: No capacity estimates are available.

HOW MADE

Calcining limestone (mainly $CaCO_3$) to make quicklime (CaO); then adding water to make hydrated lime, $Ca(OH)_2$

MAJOR END USES

Metallurgy (mainly steel flux) 40%, chemical manufacture 10%, potable water treatment 10%, sewage and pollution control 10%, construction 5%, pulp and paper manufacture 5%

FOREIGN TRADE

Exports—holding at about 40,000 tons in 1982; imports—down substantially to about 425,000 tons

PRICES

$30 to $50 per ton, depending on type; discounting significant

COMMERCIAL VALUE

$500 million for production, 1982

U.S. lime producers are reeling under the impact of the recession about in line with the chemical industry as a whole, with production down about 18% from 1981. They have been coping with the same difficult problems everyone has faced in 1982—torpedoed demand in major uses, large overcapacity, rising production costs, and price weakness.

Because of similar damage from the recession and from imports in the steel industry, lime's major customer, lime has few bright spots at the moment. As expected, pollution control continues to provide some demand growth for lime and is the main hope in the future. Most other uses are either at a standstill or in decline.

Since steel operations are at historically low levels compared to capacity, lime demand could be down as much as 50% this year in this use. Because steel and other metallurgical uses generally make up more than 40% of U.S. lime consumption, it is easy to see why analysts forecast 1982 lime production at no more than 15.5 million tons, down some 3.4 million tons from 1981.

For a product as stable as lime, the production drop this year is quite a shock. Output in 1982 will be the lowest since 1963. Generally, lime volume rose through the 1960s and then plateaued through the 1970s as growth in steel tailed off.

Production has risen some in recent months, but not very much. Output for the first seven months of 1982 is estimated to be down more than 20% from a year ago. Some freshening in demand because of pinched inventories and the usual seasonal autumn pickup in sugar beet processing is expected to ease the decline for the whole year.

No industrywide capacity estimates are available for lime. However, industry sources say that plant operating rates are down, even though some plants have been closed. The overall sag is called the worst since the 1930s' depression.

Lime's slump began before this year. In fact, the recent production high point was 21.0 million tons in 1979. The U.S. Bureau of Mines puts the total number of plants in the U.S. operating at least in part in 1981 at 151, down three from 1980. The plant list will drop at least this much again in 1982.

However, plants making lime, basically kilns and auxillary equipment, can be left shut down for relatively long periods without major damage. Plants also can be started up in a relatively short time at low cost compared to most other chemical plants. It is these shut-down lime plants that make estimates so hazy for operable capacity and actual operating rates.

Lime operations, especially in captive plants, are influenced heavily by changes in use patterns. For example, many uses take both lime and limestone, though not in specific areas. In steel making, lime is used in basic oxygen and electric furnace plants, whereas limestone is used as the flux in open hearth furnace steel plants. Hence, the shift to basic oxygen and electric furnaces caused lime demand to grow rapidly until the recent slowdown.

The major lime use that continues to grow is pollution control. Most important for the longer term is stack gas scrubbing to remove sulfur dioxide. For 1982, analysts estimate that more than 1 million tons of lime will be used for pollution control, mainly for dry scrubbing of gases. Many additional scrubbers are being built or planned, and growth in this use could continue as much as 10% per year in 1983 after a similar gain in 1982. The future for this use of lime (and for use of limestone in wet scrubbers as well) depends heavily on any future government decisions on the seriousness of the acid rain problem arising from utility stacks.

Many other uses of lime are holding their own in 1982 or are expanding a little. Unfortunately, these uses are small compared to steel and will not offset the decline there. For example, use of lime in construction for soil stabilization and other purposes might be up 2% in 1982 in spite of a drop in total construction. Wastewater treating, which includes municipal sewage treatment, also is expected to post a small gain in 1982.

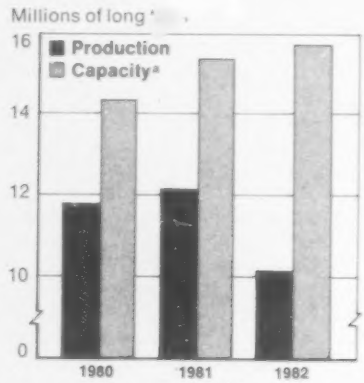
Most of the other markets for lime, such as pulp and paper making or glass making, will have small declines in use this year. But their impact on total lime demand will be minimal, much like the net impact of growing uses. On balance then, lime producers will have to wait out the recession in steel before getting back on a growth curve.

Sulfur

S

- ***Demand down***
- ***Capacity peaking***
- ***Prices down***

PRODUCTION/CAPACITY



a All sources as of first quarter; excludes standby capacity of about 5 million long tons at recovery plants and smelters.

HOW MADE

Melted from underground deposits, recovered from sulfur compounds processed in refineries, natural gas processing plants, and smelters

MAJOR DERIVATIVES (U.S.)

Sulfuric acid 90%, chemicals 5%

MAJOR END USES (U.S.)

Fertilizer 60%, chemicals 20%

FOREIGN TRADE

Exports—declining in 1982 to about 900,000 long tons; imports—down to about 2.25 million long tons

PRICES

$135 per long ton f.o.b. Tampa, Fla.

COMMERCIAL VALUE

$1.2 billion for production, 1982

One of the most recession-resistant products in the entire U.S. chemical industry a year ago has joined the pack. Sulfur, most of which is converted to sulfuric acid, is one of the true workhorse materials of the chemical industry. But this year it has gone lame. This important inorganic starting chemical has suffered badly from declining demand topped off by a round of lower posted prices as the fourth quarter opened.

Next year, especially in the second half, the grass may be greener and sulfur demand improve. However, full recovery to 1981 levels won't happen that soon.

Fertilizer, which uses sulfuric acid to make phosphoric acid, accounts for 60% of all sulfur use. In 1982, fertilizer demand in both the U.S. and export markets has declined more than expected by most industry observers. A leading factor has been the high cost of money, which has aggravated across-the-board cuts in inventories of finished fertilizers. Upstream phosphoric acid manufacture dropped drastically, followed quickly by a slide in sulfur demand.

Nonfertilizer uses of sulfuric acid such as making chemicals and steel also have declined, but less drastically because of the recession. These drops in acid demand further reduced need for sulfur.

Output of sulfur for 1982 will be down especially sharply in the Frasch mining category. Current estimates are that Frasch sulfur production will be off by about 1.7 million long tons (more than 25%) this year as Frasch producers cope with reduced demand and a return of their inventories to acceptable levels.

Other sources of sulfur or its equivalent will change less drastically in 1982. Recovered sulfur from petroleum and natural gas may be up very slightly as crude oil processed in the U.S. continues its sour (sulfur-heavy) trend. Smelter gas sulfur equivalents will be down somewhat, probably less than 10%, because of the decline in demand for nonferrous metals, mostly copper. Total production of sulfur is expected to be about 10.1 million tons.

Capacity to produce sulfur may decline slightly during 1982 after rising for a number of years to reach 15 million long tons per year in the first quarter. As in the past, recovered sulfur capacity will continue to rise because of the need to control sulfur emissions and to prevent sulfur or a derivative from poisoning catalysts. This year the expansion in recovery capacity could be smaller than in 1981 because fewer large hydrosulfurizing units will be added in refineries and because gas available for processing will do better than hold even.

One shutdown of Frasch capacity occurred in 1981. Texasgulf, a subsidiary of France's Elf Aquitaine, closed its Moss Bluff mine near Liberty, Tex., in the third quarter. This mine had capacity estimated by industry sources at about 300,000 tons per year, but it was not being run anywhere close to capacity.

Current Frasch sulfur capacity is about 7.5 million tons a year. The operating rate for these mines will be about 60% of probable capacity. Operating rates for units producing other kinds of sulfur or its equivalent are hazy because most of those operations carry 100% extra capacity as insurance to avoid interruptions in primary operations if sulfur processing units have to be shut down for mechanical reasons.

The Frasch operating rate about matches estimates of present sulfuric acid and phosphoric acid plant operating rates—a clear indication of the importance of these end uses to sulfur demand. A pickup in all these operating rates may be as much as a year in coming, according to some industry sources.

The slump in phosphoric acid production began with a large cut in inventories of phosphate fertilizers in 1981 and carried over into 1982. On top of inventory cutting, farm use of phosphate fertilizers in the last crop year, ending in June, was down about 10%. The current crop year probably will match 1982 with some additional drawdown of inventory in early 1983. Hopes for a pickup in sulfur demand in the second half of 1983 rest on rebuilding inventories and on improving exports.

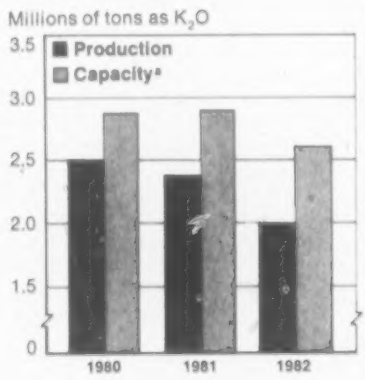
The nonfertilizer uses of sulfuric acid also may not really pick up until well into 1983 if general recovery takes hold. None of these secondary volume uses seems to be up in 1982. Most of these will not get back to 1981 or earlier levels until after 1983.

Potash

KCl, K_2SO_4, $K_2SO_4 \cdot 2MgSO_4$

- ***Demand slowing***
- ***Capacity down***
- ***Prices flat***

PRODUCTION/CAPACITY



[a] First quarter.

HOW MADE

Shaft and solution mining of potassium salts, mainly the chloride, and subsequent purification

MAJOR END USES

Fertilizer 95%

FOREIGN TRADE

Exports—declining this year to about 500,000 tons; imports—down 10% this year to about 5 million tons

PRICES

$110 to $130 per ton of K_2O equivalent

COMMERCIAL VALUE

$225 million for production, 1982

Like sulfur, potash depends on a single end use, fertilizer. So when farm income in the U.S. and abroad does well, potash demand goes well. But when farm income falls, potash demand weakens as inventories are reduced to keep down interest costs. That's what is going on now.

This drop will put 1982 U.S. potash production at 2.0 million tons, the lowest point since 1954 following a decade and a half of decline. The high point for U.S. output was 3.3 million tons in 1966. Potash seemed to stabilize in the late 1970s and even enjoyed good years in the fertilizer boom at the end of the decade. But for U.S. producers, that is all now in the past.

The impact of slowing U.S. demand also falls heavily on Canadian producers. Imports of Canadian potash this year are expected to fall 10% or more, probably more than 500,000 tons measured in terms of potassium oxide (K_2O) content. U.S. production also will be down in 1982, by 400,000 tons or 16% from 1981 production of 2.4 million tons of K_2O equivalent.

Potash is the outstanding example of a major-volume U.S. chemical commodity dependent on imports for more than half of its total demand. U.S. production covers just a quarter of demand. Variables of production cost and location—in effect, transportation costs—are behind this reliance on imports. Canadian potash production is mostly in Saskatchewan, closer to the major fertilizer demand areas of the U.S. Midwest than are most U.S. mines in New Mexico and Utah.

The high level of potash imports, however, doesn't prevent exports. Exports take nearly a quarter of U.S. production now. Most of these exports move through U.S. Gulf Coast ports to Latin America, again for reasons of lower transportation cost than from Canada. Other big importers of U.S. potash are in the western Pacific.

Strong exports and potential to capture more of the U.S. market would seem to provide enough demand to use all of U.S. capacity to mine and process potash. Unfortunately, this is not the case in 1982 and hasn't been for some time. Typically, U.S. producers of potash run their operations at about 85% of nameplate capacity. Slowing demand has even caused a reduction in capacity. Last year, National Potash closed its mine near Carlsbad, N.M., with a capacity of about 275,000 tons per year. This closure cut U.S. capacity to about 2.7 million tons per year.

Even with this plant closure, the average operating rate in 1982 will decline to about 74% of nameplate capacity. Currently, operating rates are estimated at 70% of nameplate capacity in a seasonally low fourth quarter.

Producers don't expect demand for potash to increase much in 1983. Matching 1982 spring demand apparently is all most of them hope to do. And spring 1982 was a distinct disappointment. Fertilizer experts had expected spot shortages of potash because of a squeezed supply of rail cars. As it turned out, spring demand wasn't as good as forecast, and inventories in regional warehouses became swollen.

A seasonal rush to meet fertilizer demand next spring is again anticipated. But again, big regional inventories plus general slack in rail shipping probably will avert any real supply problems.

The long-term trend for potash demand in the U.S., as well as in some other countries such as Brazil, has been for a slow increase, 2 to 4% per year. Most demand growth has been attributed to increases in production of soybeans in these countries. As with other major plant nutrients, there's disagreement over near-term importance of potassium in soils. As a result, farmers are inclined to try to get by on residual potassium in soils during times, like now, when money is tight. Some farmers prefer to put their fertilizer money into nitrogen at the expense of potash with the aim of an immediate increase in production.

None of the nonfertilizer uses of potash, about 5% of the total, is showing any signs of major growth this year. Most of these uses are quite specialized. Many of the potassium chemicals are derived from potassium hydroxide, made by electrolysis of the chloride, the dominant mined form. Some of the derivatives such as potassium phosphates also go into fertilizers in small quantities for crops sensitive to chloride or sulfate ions. The other uses range from detergent builders to special soaps, specialty glasses, water and metal treatments, and many more.

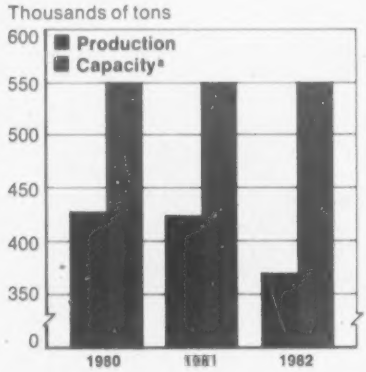
Key Chemicals

Phosphorus

P_4

- ***Demand off***
- ***Capacity flat***
- ***Price holding up***

PRODUCTION/CAPACITY



[a] First quarter.

HOW MADE

Reduction of phosphate rock in electric furnaces with carbon and silica as aids

MAJOR DERIVATIVES (U.S.)

Phosphoric acid and derivatives 85%, other chemicals 10%

MAJOR END USES (U.S.)

Detergents 40%, foods and beverages 15%, metal treating 10%

FOREIGN TRADE

Exports—down to about 15,000 tons in 1982; imports—negligible

PRICES

90 cents to $1.00 per lb at plants; merchant volume very small

COMMERCIAL VALUE

$700 millions for production, 1982

Phosphorus, like many inorganic chemicals, provides a good example of a mature product wide open to business cycles. This year, its production will decline more than 10% under the impact of the recession with some added loss in exports. Longer term, few prospects exist for an increase in demand other than for use in making small-volume products considered specialty chemicals.

Two of phosphorus' major uses, detergents and food, can be affected by influences other than those related directly to the economy. Environmental concerns, though no longer a heavy influence on phosphate materials in detergents, still exist and underlie some reformulation efforts, including a trend toward zeolites (C&EN, Sept. 27, page 10). In another case, shifts in consumer tastes in baked goods, soft drinks, and convenience foods change demand for phosphoric acid derivative.

These outside influences and the recessionary decline in manufacturing will cause a drop in phosphorus production in 1982 of about 12%, or 50,000 tons or so. Actual production will be about 372,000 tons, well below the recent high of 460,000 tons in 1979. The historic high occurred 10 years before at 620,000 tons.

Over the years, phosphorus plant capacity has declined, too. For now, capacity is stable at about 550,000 tons per year. Present nameplate capacity likely will hold for two years at least.

Unless something unusual happens in the fourth quarter of 1982 to accelerate phosphorus derivatives in their long pipeline from elemental phosphorus, U.S. phosphorus producers will run their electric furnaces at 67% of nameplate capacity on the average. The rate will be down significantly from 77.5% in 1981—suggesting that phosphorus producers have the same problems as do most operators in the chemical industry in covering expenses fully.

Since the industry is operating at two thirds of nameplate capacity, chances of capacity expansion are slim. Costs for furnaces, including expensive pollution control equipment, run high. And further market loss could occur if technology improves to purify wet-process phosphoric acid, making it competitive with phosphorus-derived acid in food-grade uses.

With the exception of a small uptick in 1979, phosphorus production trended down all through the 1970s. Behind the downtrend was the shift in detergents. Local phosphate bans hurt this largest use of elemental phosphorus for a long time. Current reformulations of detergents, including some of the newer brands with higher phosphate contents, again could reduce phosphorus demand.

At present, industry sources say the impact of reformulation is fogged up by the economy. The recession has hit sales of detergents along with almost everything else. Consumers apparently are being more careful in measuring the quantity needed, cutting use, or just not washing clothes as much. Even if detergent demand recovers, long-term growth at best will be in line with the slow growth of population.

Use of phosphoric acid and derivatives in foods, beverages, and dentifrices also has projections blurred by the recession. Under better economic conditions, growth rates in these uses would be a bit higher than of population, due to innovation in consumer products containing phosphoric acid derivatives. Product development can help, but product acceptance has proven uncertain in the past, making forecasters leery of expecting greatly improved growth rates.

The third largest use of these derivatives has been in metal treating, mainly for surface preparation of steel for automobiles. With auto production in the U.S. running about half the levels of a few years ago, this use of phosphorus has tumbled. Competition also comes and goes for phosphatizing in the auto industry as different finishes are developed and different means are proposed to slow the corroding effects of salts used to melt snow on streets. The likelihood of a slow general recovery and the shift toward smaller cars means that recovery in the metal-treating outlet for phosphorus will take a long time.

The many other uses of phosphorus are diverse and generally small. The derivatives going into agricultural chemicals such as pesticides hold the brightest prospects. The others are in the small-growth category.

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Congressional voting records on key chemical issues

Last year, 82% of the 9% of American Chemical Society members responding to a question included as part of the dues mailing expressed the desire that C&EN publish "the voting record of each U.S. Congressman on certain issues of concern to chemists." As requested by the ACS Board of Directors, C&EN in this issue publishes a summary of 13 House votes taken this year.

The votes were taken on amendments to and/or final passage of six different bills. A careful reading of both the explanation and a Congressman's vote is necessary. A yea vote is not necessarily pro-science just as a nay vote is not necessarily antiscience. In some cases a nay vote supports a higher level of research funding.

In any case, a vote against a particular bill should be interpreted with special care. For example, a no vote on the HUD-Independent Agencies Appropriation bill may mean that someone didn't like the level of housing subsidies included therein, but still supported the scientific research that also is funded under that bill.

A corresponding voting record for the Senate is not published here although it did pass five of the six bills acted on by the House. The Senate took these actions:

- *On July 9, 1981, it passed by a voice vote S. 255, which restores to the term of a patent the period of time needed to gain federal regulatory approval.*
- *On Dec. 8, 1981, by a unanimous vote of 90 yeas, it passed S. 881 requiring federal agencies with an R&D budget greater than $100 million to set aside specific percentages for small businesses.*
- *On April 29, 1982, it passed by a voice vote S. 2271 setting the fiscal 1983 authorization for the National Bureau of Standards at $111.5 million.*
- *On May 13, 1982, on a unanimous vote of 92 yeas, it adopted the amendment offered by Sen. Mark Hatfield (R.-Ore.) to S. 2248, the Department of Defense fiscal 1983 authorization bill. The amendment prohibits the obligation or expenditure of funds for binary chemical weapons unless the President were to make certain certifications.*
- *On Sept. 24, 1982, it passed by 73 yeas to 11 nays H.R. 6596, which appropriates funds for fiscal 1983 for the Department of Housing & Urban Development and certain independent agencies such as the National Science Foundation and the National Aeronautics & Space Administration. No amendment that concerned scientific research was offered.*

State, district Representative	Issues voted on (see key)												
	1	2	3	4	5	6	7	8	9	10	11	12	13
ALABAMA													
1. Edwards	N	Y	Y		N	Y	Y	N	N	N	N	Y	Y
2. Dickinson	—	N	N		N	Y	—	N	N	N	N	Y	Y
3. Nichols	N	Y	Y		Y	N	Y	Y	N	N	N	Y	Y
4. Bevill	N	Y	Y		Y	N	Y	Y	N	N	Y	Y	N
5. Flippo	N	Y	Y		Y	N	Y	Y	N	N	Y	Y	Y
6. Smith	Y	N	N		—	Y	N	Y	N	N	Y	Y	F
7. Shelby	N	N	Y		Y	Y	Y	Y	N	N	N	Y	Y
ALASKA													
Young	Y	N	Y	VOICE VOTE	N	Y	Y	Y	N	N	—	—	F
ARIZONA													
1. Rhodes	Y	N	Y		N	Y	Y	—	—	—	N	Y	Y
2. Udall	N	Y	Y		Y	N	Y	Y	Y	Y	Y	—	N
3. Stump	Y	N	N		N	Y	N	N	N	N	N	Y	Y

Key to voting issues

1. H.R. 5842—NSF fiscal 1983 authorization. Amendment by Winn (R.-Kan.) to reduce funding levels to President's request, cutting by $30 million funds for science and engineering education (adopted 194 to 191) 5/19/82.

2. H.R. 5842—NSF fiscal 1983 authorization. Amendment by Peyser (D.-N.Y.) to restore $20 million of the $30 million deleted from science and engineering education funds (adopted 203 to 188) 5/19/82.

3. H.R. 5842—NSF fiscal 1983 authorization. Final passage of the bill providing $1,052.3 million for research and related activities, $35 million for science and engineering education (passed 282 to 111) 5/19/82

4. H.R. 5272—NBS fiscal 1983 authorization. Amendment by Walker (R.-Pa.) to reduce funding levels to President's request, cutting $12.5 million (adopted by voice vote) 5/19/82.

5. H.R. 5272—NBS fiscal 1983 authorization. Amendment by Fuqua (D.-Fla.) to Walker amendment limiting the cut to $6.2 million (adopted 195 to 191) 5/19/82.

6. H.R. 5272—NBS fiscal 1983 authorization. Motion by Walker (R.-Pa.) to send bill back to committee with instructions to delete a further $6 million (rejected 193 to 193) 5/19/82.

7. H.R. 5272—NBS fiscal 1983 authorization. Final passage of the bill providing $118 million (passed 249 to 131) 5/19/82.

8. H.R. 4326—Small Business Innovation Act. Final passage of the bill requiring federal agencies with an R&D budget greater than $100 million to set aside specific percentages for small businesses (passed 353 to 57) 6/23/82.

9. H.R. 6030—DOD fiscal 1983 authorization. Amendment by Bethune (R.-Ark.) prohibiting use of authorized funds for procurement of binary munitions or for production facilities (adopted 232 to 181) 7/22/82.

10. H.R. 6030—DOD fiscal 1983 authorization. Amendment by Zablocki (D.-Wis.) deleting $54 million requested for production of binary chemical weapons (adopted 251 to 159) 7/22/82.

11. H.R. 6956—HUD-independent agencies fiscal 1983 appropriation. Amendment by Scheuer (D.-N.Y.) increasing funding for EPA R&D activities $25 million (rejected 131 to 263) 9/15/82.

12. H.R. 6956—HUD-independent agencies fiscal 1983 appropriation. Final passage of bill providing, out of total of $47 billion, $1.1 billion for NSF, $6.4 billion for NASA, and $3.7 billion for EPA (passed 343 to 38) 9/15/82.

13. H.R. 6444—Patent Term Restoration Act. Vote to suspend the rules and pass bill (two-thirds majority needed) restoring to the term of a patent the period of time needed to gain regulatory approval (failed 250 to 132) 9/15/82.

Key to symbols:
A = Against, but not voting
F = For, but not voting
N = Voted against (nay)
P = Voted present
Y = Voted for (yea)
– = Did not vote or make position known
Boldface names = Republicans
(Democrats' names in light type)

State, district Representative	Issues voted on (see key)												
	1	2	3	4	5	6	7	8	9	10	11	12	13
4. Rudd	Y	N	N		N	Y	N	N	N	N	N	Y	Y
ARKANSAS													
1. Alexander	N	Y	Y		Y	N	Y	Y	N	N	N	—	Y
2. **Bethune**	Y	N	N		N	Y	N	Y	Y	Y	N	—	—
3. **Hammerschmidt**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
4. Anthony	Y	Y	Y		Y	N	Y	Y	N	N	N	Y	Y
CALIFORNIA													
1. **Chappie**	Y	N	N		N	Y	N	Y	—	—	N	N	Y
2. **Clausen**	Y	N	Y		N	Y	N	Y	Y	Y	N	Y	Y
3. Matsui	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
4. Fazio	N	Y	Y		Y	N	Y	N	N	Y	N	Y	N
5. Burton, John	—	—	—		—	—	—	Y	—	—	—	—	—
6. Burton, Philip	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
7. Miller	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
8. Dellums	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
9. Stark	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
10. Edwards	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
11. Lantos	N	Y	Y		Y	N	Y	N	Y	Y	N	Y	N
12. **McCloskey**	Y	N	Y		—	—	—	N	Y	Y	N	Y	Y
13. Mineta	N	Y	Y		Y	N	Y	N	Y	Y	Y	Y	N
14. **Shumway**	Y	N	N		N	N	N	N	N	N	N	N	Y
15. Coelho	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
16. Panetta	N	Y	Y		Y	N	Y	—	Y	Y	N	Y	N
17. **Pashayan**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
18. **Thomas**	F	A	A		—	F	A	Y	N	N	—	—	F
19. **Lagomarsino**	Y	N	N		N	Y	N	Y	N	N	N	Y	N
20. **Goldwater**	—	—	—		—	—	—	Y	N	—	—	Y	—
21. **Fielder**	Y	N	Y		N	Y	Y	Y	N	N	N	Y	Y
22. **Moorhead**	Y	N	N		N	Y	N	Y	N	N	N	N	Y
23. Beilenson	N	Y	Y		Y	N	Y	N	Y	Y	Y	Y	N
24. Waxman	N	Y	Y		Y	N	Y	N	Y	Y	Y	Y	N
25. Roybal	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
26. **Rousselot**	Y	N	N		N	Y	N	Y	N	—	N	Y	Y
27. **Dornan**	Y	N	N		—	F	—	Y	N	N	N	Y	Y
28. Dixon	A	F	—		—	A	—	Y	Y	—	F	Y	N
29. Hawkins	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
30. Martinez[a]									Y	Y	Y	Y	N
31. Dymally	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
32. Anderson	N	Y	Y		N	Y	Y	Y	Y	Y	N	Y	N
33. **Grisham**	—	—	—		—	—	—	Y	N	N	—	Y	Y
34. **Lungren**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
35. **Dreier**	F	A	—		—	—	—	Y	N	N	N	N	Y
36. Brown	N	Y	Y		Y	N	Y	N	Y	Y	Y	Y	Y
37. **Lewis**	Y	N	N		N	Y	N	Y	N	N	Y	N	Y
38. Patterson	N	Y	Y		Y	N	Y	N	—	Y	N	Y	N
39. **Dannenmeyer**	Y	N	N		N	Y	N	N	N	N	N	N	Y
40. **Badham**	—	—	—		—	—	—	N	N	N	N	N	Y
41. **Lowery**	Y	N	Y		N	Y	N	Y	N	N	N	—	Y
42. **Hunter**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
43. **Burgener**	—	A	—		—	—	—	N	—	—	N	—	N
COLORADO													
1. Schroeder	N	Y	N		Y	N	Y	Y	Y	Y	Y	N	N
2. Wirth	—	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
3. Kogovsek	Y	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
4. **Brown**	Y	N	Y		N	Y	N	Y	Y	Y	N	N	Y
5. **Kramer**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
CONNECTICUT													
1. Kennelly	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	Y
2. Gejdenson	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
3. **De Nardis**	N	Y	Y		N	Y	N	—	Y	Y	Y	Y	Y

State, district Representative	Issues voted on (see key)												
	1	2	3	4	5	6	7	8	9	10	11	12	13
4. McKinney	Y	N	Y		N	Y	Y	Y	Y	Y	Y	Y	Y
5. Ratchford	Y	Y	Y		Y	N	Y	Y	Y	Y	N	Y	Y
6. Moffett	N	Y	Y		Y	—	Y	Y	Y	Y	—	Y	—
DELAWARE													
Evans	Y	N	Y		N	Y	Y	Y	Y	Y	N	Y	Y
FLORIDA													
1. Hutto	N	Y	Y		Y	N	Y	Y	N	N	N	Y	Y
2. Fuqua	N	Y	Y		Y	N	—	N	N	N	Y	Y	Y
3. Bennett	Y	N	Y		N	Y	Y	Y	N	N	N	N	Y
4. Chappell	N	Y	Y		Y	N	Y	Y	N	N	—	—	—
5. **McCollum**	Y	N	N		N	Y	N	Y	N	N	N	Y	N
6. **Young**	Y	N	N		N	Y	Y	Y	N	N	N	Y	Y
7. Gibbons	N	Y	Y		Y	N	Y	Y	N	N	Y	Y	Y
8. Ireland	N	N	Y		Y	N	Y	Y	N	N	N	Y	Y
9. Nelson	N	Y	Y		Y	N	Y	Y	N	N	Y	Y	N
10. **Bafalis**	—	—	—		—	—	—	—	N	N	—	—	—
11. Mica	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
12. **Shaw**	Y	N	N		N	Y	N	Y	N	N	N	Y	N
13. Lehman	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	Y
14. Pepper	N	Y	Y		Y	N	Y	Y	—	—	A	—	A
15. Fascell	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
GEORGIA													
1. Ginn	—	—	—		—	—	—	—	—	—	N	Y	Y
2. Hatcher	N	Y	Y		Y	N	Y	Y	N	—	N	Y	Y
3. Brinkley	N	Y	Y		Y	N	Y	Y	N	N	N	Y	Y
4. Levitas	Y	N	Y		Y	N	Y	Y	N	N	N	N	Y
5. Fowler	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
6. **Gingrich**	N	Y	Y		N	Y	N	Y	N	N	Y	—	N
7. McDonald	Y	N	N		N	Y	N	N	N	N	N	N	Y
8. Evans	N	Y	N		Y	Y	N	Y	N	N	—	—	—
9. Jenkins	N	Y	Y		N	Y	N	Y	Y	Y	N	Y	Y
10. Barnard	N	Y	Y		Y	Y	N	Y	N	N	N	Y	Y
HAWAII													
1. Heftel	N	Y	Y		Y	N	Y	Y	N	P	N	Y	N
2. Akaka	N	Y	Y		Y	N	Y	Y	N	Y	—	—	A
IDAHO													
1. Craig	Y	N	N		N	Y	N	Y	Y	Y	N	Y	Y
2. Hansen	Y	N	N		N	Y	N	N	N	N	N	N	Y
ILLINOIS													
1. Washington	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
2. Savage	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	—
3. Russo	N	Y	Y		Y	N	Y	Y	Y	Y	Y	N	N
4. **Derwinski**	Y	N	N		N	Y	N	Y	N	N	N	—	Y
5. Fary	N	Y	Y		Y	N	Y	Y	N	Y	Y	Y	N
6. **Hyde**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
7. Collins	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
8. Rostenkowski	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
9. Yates	N	Y	Y		Y	N	Y	N	Y	Y	Y	Y	N
10. **Porter**	Y	N	Y		N	Y	N	Y	Y	Y	N	Y	Y
11. Annunzio	N	Y	Y		Y	N	Y	Y	N	Y	N	Y	N
12. **Crane, Philip**	F	A	A		—	F	A	N	N	N	N	N	Y
13. **McClory**	Y	N	Y		N	Y	Y	Y	Y	Y	—	—	F
14. **Erlenborn**	Y	N	Y		N	Y	N	N	Y	Y	N	Y	Y
15. **Corcoran**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
16. **Martin**	Y	N	N		N	Y	N	Y	Y	Y	N	Y	Y
17. **O'Brien**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
18. **Michel**	F	N	N		N	Y	N	Y	N	N	N	Y	Y
19. **Railsback**	Y	N	Y		N	Y	Y	Y	Y	Y	N	Y	Y
20. **Findley**	Y	N	Y		—	F	N	Y	Y	Y	N	Y	N

State, district / Representative	Issues voted on (see key) 1	2	3	4	5	6	7	8	9	10	11	12	13
21. **Madigan**	Y	N	N		N	Y	N	Y	N	Y	N	Y	Y
22. **Crane, Daniel**	Y	N	N		N	Y	N	N	N	N	N	N	F
23. Price	N	Y	Y		Y	N	Y	Y	N	N	N	Y	Y
24. Simon	N	Y	Y		Y	N	Y	Y	Y	Y	Y	—	N
INDIANA													
1. Vacant													
2. Fithian	N	N	Y		Y	N	Y	—	Y	Y	—	—	—
3. **Hiler**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
4. **Coats**	Y	N	N		N	Y	N	Y	Y	Y	N	Y	Y
5. **Hillis**	Y	N	Y		N	Y	N	Y	N	N	N	Y	—
6. Evans	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	—
7. **Myers**	Y	N	Y		N	Y	N	Y	N	N	N	Y	Y
8. **Deckard**	Y	—	Y		N	Y	N	Y	Y	Y	Y	Y	Y
9. Hamilton	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	Y
10. Sharp	N	Y	Y		N	N	Y	Y	Y	Y	Y	Y	Y
11. Jacobs	—	—	—		—	—	—	N	Y	Y	N	Y	N
IOWA													
1. **Leach**	N	Y	F		N	Y	Y	Y	Y	Y	Y	Y	N
2. **Tauke**	—	Y	Y		N	Y	N	Y	Y	Y	Y	—	Y
3. **Evans**	N	Y	Y		N	Y	N	Y	Y	Y	Y	Y	N
4. Smith	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
5. Harkin	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
6. Bedell	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
KANSAS													
1. **Roberts**	Y	N	N		N	Y	N	Y	Y	Y	N	Y	Y
2. **Jeffries**	Y	N	N		N	Y	N	Y	N	N	N	N	Y
3. **Winn**	Y	N	Y		N	Y	N	Y	N	N	N	Y	Y
4. Glickman	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
5. **Whittaker**	Y	N	N		N	Y	N	Y	Y	Y	N	Y	Y
KENTUCKY													
1. Hubbard	—	—	—		—	—	—	N	N	N	N	N	Y
2. Natcher	Y	N	Y		N	N	Y	Y	Y	Y	N	Y	Y
3. Mazzoli	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	Y
4. **Snyder**	Y	N	N		N	Y	N	Y	N	N	N	Y	N
5. **Rogers**	Y	—	—		—	—	—	Y	N	N	N	Y	Y
6. **Hopkins**	Y	N	N		N	Y	N	N	Y	Y	N	Y	N
7. Perkins	N	Y	Y		N	N	Y	Y	Y	Y	Y	Y	Y
LOUISIANA													
1. **Livingston**	Y	N	N		N	Y	Y	Y	N	N	N	Y	Y
2. Boggs	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
3. Tauzin	Y	N	Y		N	Y	Y	Y	N	N	N	Y	Y
4. Roaemer	Y	N	Y		N	Y	Y	Y	N	N	N	N	N
5. Huckaby	Y	N	Y		N	N	Y	Y	—	N	N	Y	N
6. **Moore**	Y	N	Y		N	Y	Y	N	N	N	N	Y	Y
7. Breaux	Y	Y	Y		Y	N	Y	Y	N	—	N	Y	Y
8. Long	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
MAINE													
1. **Emery**	Y	N	Y		N	Y	Y	Y	Y	Y	Y	Y	Y
2. **Snowe**	Y	N	Y		N	Y	Y	Y	Y	Y	N	Y	N
MARYLAND													
1. Dyson	Y	N	Y		Y	N	Y	—	N	N	Y	Y	N
2. Long	N	—	Y		Y	N	Y	Y	Y	Y	Y	Y	N
3. Mikulski	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
4. **Holt**	Y	N	Y		N	Y	Y	Y	N	N	Y	—	Y
5. Hoyer	N	—	Y		Y	N	Y	Y	Y	Y	Y	Y	N
6. Byron	Y	N	Y		Y	N	Y	Y	N	N	N	Y	—
7. Mitchell	N	Y	Y		Y	N	Y	Y	Y	Y	—	Y	N
8. Barnes	N	Y	Y		Y	N	Y	Y	—	—	Y	Y	N

State, district / Representative	Issues voted on (see key) 1	2	3	4	5	6	7	8	9	10	11	12	13
MASSACHUSETTS													
1. **Conte**	N	Y	Y		N	Y	Y	Y	Y	Y	N	Y	Y
2. Boland	N	Y	Y		Y	N	Y	—	Y	Y	N	Y	Y
3. Early	N	Y	Y		Y	N	Y	N	Y	Y	N	Y	N
4. Frank	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
5. Shannon	N	Y	Y		Y	N	Y	N	Y	Y	N	Y	N
6. Mavroules	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
7. Markey	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
8. O'Neill													
9. Moakley	N	Y	Y		Y	N	Y	Y	Y	—	Y	Y	N
10. **Heckler**	N	Y	Y		N	Y	Y	Y	Y	Y	Y	Y	N
11. Donnelly	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
12. Studds	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
MICHIGAN													
1. Conyers	N	Y	Y		Y	N	Y	N	Y	Y	Y	Y	N
2. **Pursell**	N	N	Y		N	Y	Y	Y	Y	Y	N	Y	Y
3. Wolpe	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
4. **Siljander**	Y	N	N		N	Y	N	—	N	N	N	Y	Y
5. **Sawyer**	Y	N	Y		N	Y	Y	Y	N	N	N	Y	Y
6. Dunn	N	Y	Y		N	Y	N	Y	Y	Y	N	Y	Y
7. Kildee	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
8. Traxler	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
9. **Vander Jagt**	Y	N	Y		N	Y	Y	Y	Y	Y	N	Y	Y
10. Albosta	Y	Y	Y		Y	N	Y	Y	Y	Y	N	Y	Y
11. **Davis**	Y	N	Y		N	Y	Y	Y	N	N	N	Y	Y
12. Bonior	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
13. Crockett	N	Y	Y		—	—	—	Y	Y	Y	Y	Y	N
14. Hertel	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
15. Ford	N	Y	Y		Y	N	Y	Y	Y	—	Y	Y	N
16. Dingell	N	Y	Y		Y	N	Y	N	N	N	Y	Y	Y
17. Brodhead	N	N	Y		Y	N	Y	Y	Y	Y	Y	Y	N
18. Blanchard	N	Y	Y		Y	N	Y	—	Y	Y	—	—	—
19. **Broomfield**	Y	N	Y		N	Y	N	Y	Y	Y	N	Y	Y
MINNESOTA													
1. **Erdahl**	—	—	—		—	—	—	Y	Y	Y	N	Y	N
2. **Hagedorn**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
3. **Frenzel**	Y	N	N		N	Y	N	Y	Y	Y	N	Y	Y
4. Vento	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
5. Sabo	N	Y	Y		Y	N	Y	N	Y	Y	N	Y	N
6. Weber	Y	N	N		N	Y	N	Y	Y	Y	Y	Y	Y
7. **Stangeland**	Y	N	N		N	Y	N	Y	N	N	N	Y	—
8. Oberstar	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
MISSISSIPPI													
1. Whitten	Y	N	Y		N	Y	Y	Y	Y	Y	N	Y	Y
2. Bowen	—	—	—		—	—	—	Y	—	—	N	Y	Y
3. Montgomery	Y	N	Y		N	Y	Y	—	N	N	N	Y	Y
4. Dowdy	Y	Y	Y		Y	N	Y	Y	—	N	N	Y	N
5. **Lott**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
MISSOURI													
1. Clay	N	Y	Y		Y	N	Y	—	—	—	Y	Y	N
2. Young	N	Y	Y		Y	N	Y	Y	N	N	N	Y	Y
3. Gephardt	N	Y	Y		Y	N	Y	N	N	N	N	Y	Y
4. Skelton	N	Y	N		N	Y	N	Y	N	N	N	Y	—
5. Bolling	N	Y	—		Y	—	—	—	N	N	—	—	N
6. **Coleman**	N	Y	Y		N	Y	N	Y	—	—	N	Y	Y
7. **Taylor**	Y	N	N		N	Y	N	N	N	N	N	Y	Y
8. **Bailey**	Y	N	Y		N	Y	N	Y	Y	Y	N	Y	N
9. Volkmer	N	Y	Y		Y	N	Y	Y	N	Y	Y	Y	Y
10. **Emerson**	Y	N	N		N	Y	N	Y	—	—	N	Y	Y

State, district Representative	Issues voted on (see key)												
	1	2	3	4	5	6	7	8	9	10	11	12	13
MONTANA													
1. Williams	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
2. **Marlenee**	—	N	N		N	Y	N	Y	N	Y	N	N	Y
NEBRASKA													
1. **Bereuter**	Y	N	Y		N	Y	N	Y	Y	Y	N	Y	N
2. **Daub**	Y	N	Y		N	Y	N	Y	Y	Y	N	Y	Y
3. **Smith**	Y	N	N		N	Y	N	Y	Y	Y	N	Y	Y
NEVADA													
Santini	Y	N	Y		Y	Y	Y	Y	—	—	—	—	—
NEW HAMPSHIRE													
1. D'Amours	N	Y	Y		N	Y	Y	Y	Y	Y	—	Y	—
2. **Gregg**	Y	N	N		N	Y	N	Y	Y	Y	N	Y	Y
NEW JERSEY													
1. Florio	Y	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
2. Hughes	Y	N	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
3. Howard	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
4. **Smith**	Y	N	Y		N	Y	Y	Y	Y	Y	Y	Y	Y
5. **Fenwick**	Y	N	Y		—	—	F	Y	Y	Y	Y	Y	Y
6. **Forsythe**	Y	N	Y		N	Y	N	Y	Y	Y	—	—	F
7. **Roukema**	Y	N	Y		N	Y	Y	Y	Y	Y	N	Y	Y
8. Roe	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
9. **Hollenbeck**	N	Y	Y		N	N	Y	Y	Y	Y	Y	Y	Y
10. Rodino	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
11. Minish	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
12. **Rinaldo**	N	Y	Y		N	Y	Y	Y	Y	Y	Y	Y	Y
13. **Courter**	—	—	F		—	—	F	Y	N	N	Y	Y	F
14. Guarini	Y	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
15. Dwyer	Y	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
NEW MEXICO													
1. **Lujan**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
2. **Skeen**	Y	N	Y		N	Y	N	Y	N	N	N	Y	Y
NEW YORK													
1. **Carney**	Y	N	Y		N	Y	N	Y	N	N	N	Y	—
2. Downey	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
3. **Carman**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
4. **Lent**	—	N	N		N	Y	N	Y	N	N	Y	Y	Y
5. **McGrath**	Y	N	Y		N	Y	N	Y	Y	Y	Y	—	Y
6. **Leboutillier**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
7. Addabbo	Y	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
8. Rosenthal	N	Y	Y		Y	N	Y	Y	—	Y	Y	—	N
9. Ferraro	N	Y	Y		—	—	—	Y	Y	Y	Y	Y	N
10. Biaggi	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	Y
11. Scheuer	N	Y	Y		Y	N	Y	N	Y	Y	Y	Y	Y
12. Chisholm	N	Y	Y		—	N	Y	Y	—	Y	Y	Y	N
13. Solarz	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
14. Vacant													
15. Zeferetti	—	F	F		—	A	F	Y	Y	Y	F	—	—
16. Schumer	N	Y	Y		Y	N	Y	—	Y	Y	N	Y	N
17. **Molinari**	Y	N	Y		N	Y	N	Y	Y	Y	Y	Y	N
18. **Green**	N	Y	Y		N	Y	Y	Y	Y	Y	N	Y	Y
19. Rangel	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
20. Weiss	N	Y	Y		Y	N	Y	—	Y	Y	—	—	—
21. Garcia	N	Y	Y		Y	N	Y	—	Y	Y	N	Y	Y
22. Bingham	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	Y
23. Peyser	N	Y	Y		—	N	Y	Y	Y	Y	Y	Y	N
24. Ottinger	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
25. **Fish**	—	—	—		—	Y	Y	Y	Y	Y	N	Y	Y
26. **Gilman**	Y	N	Y		N	Y	Y	Y	N	Y	—	—	Y
27. McHugh	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
28. Stratton	Y	Y	Y		Y	Y	Y	N	N	N	N	Y	Y

State, district Representative	Issues voted on (see key)												
	1	2	3	4	5	6	7	8	9	10	11	12	13
29. **Solomon**	Y	N	N		N	Y	N	Y	—	—	Y	N	Y
30. **Martin**	Y	N	Y		N	Y	Y	Y	N	N	Y	Y	Y
31. **Mitchell**	Y	N	Y		N	Y	Y	Y	N	N	N	Y	Y
32. **Wortley**	Y	N	N		N	Y	N	Y	Y	Y	N	—	Y
33. **Lee**	Y	N	Y		N	Y	Y	Y	Y	Y	—	—	—
34. **Horton**	—	N	Y		N	Y	Y	Y	Y	Y	N	Y	Y
35. **Conable**	Y	N	N		N	Y	N	Y	Y	N	N	Y	N
36. La Falce	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
37. Nowak	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
38. **Kemp**	—	N	N		N	Y	N	Y	N	N	N	Y	Y
39. Lundine	—	—	—		—	—	—	Y	Y	Y	N	Y	Y
NORTH CAROLINA													
1. Jones	N	N	Y		Y	N	Y	Y	N	Y	N	Y	Y
2. Fountain	Y	N	Y		N	Y	Y	N	N	N	—	—	—
3. Whitley	Y	N	Y		N	Y	Y	Y	N	N	N	—	Y
4. Andrews	N	Y	Y		Y	N	Y	N	Y	Y	Y	Y	Y
5. Neal	N	Y	Y		Y	N	Y	Y	N	Y	N	Y	Y
6. **Johnston**	Y	N	N		N	Y	N	Y	N	N	N	N	Y
7. Rose	N	N	Y		Y	N	Y	Y	Y	Y	N	Y	Y
8. Hefner	Y	N	Y		Y	Y	Y	Y	N	Y	N	Y	Y
9. **Martin**	—	—	—		—	—	—	N	Y	Y	N	Y	Y
10. **Broyhill**	Y	N	N		N	Y	N	Y	Y	Y	N	Y	Y
11. **Hendon**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
NORTH DAKOTA													
Dorgan	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
OHIO													
1. **Gradison**	Y	N	N		N	Y	N	N	N	Y	N	Y	N
2. Luken	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
3. Hall	Y	N	Y		Y	N	N	Y	Y	Y	Y	Y	N
4. **Oxley**	Y	N	N		N	Y	N	Y	N	Y	N	Y	Y
5. **Latta**	Y	N	N		N	Y	N	Y	N	N	N	N	Y
6. **McEwen**	Y	N	N		N	Y	N	Y	Y	Y	N	Y	Y
7. **Brown**	—	—	—		—	—	—	—	—	—	—	—	—
8. **Kindness**	Y	N	N		N	Y	N	Y	N	N	N	N	Y
9. **Weber**	Y	Y	Y		N	Y	Y	Y	Y	Y	N	Y	Y
10. **Miller**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
11. **Stanton**	—	—	—		—	—	N	Y	Y	Y	N	—	—
12. Shamansky	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	Y
13. Pease	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
14. Seiberling	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
15. **Wylie**	Y	N	Y		N	—	—	Y	Y	Y	N	Y	Y
16. **Regula**	Y	N	Y		N	Y	N	Y	Y	Y	N	Y	Y
17. **Ashbrook**[b]	—	—	—		—	—	—	—	N	N	N	N	Y
18. **Applegate**	Y	N	N		Y	Y	N	Y	N	Y	N	Y	N
19. **Williams**	N	N	N		N	Y	Y	Y	Y	Y	N	Y	—
20. Oakar	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
21. Stokes	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
22. Eckart	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
23. Mottl	N	Y	Y		Y	N	Y	Y	N	N	Y	Y	N
OKLAHOMA													
1. Jones	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	Y
2. Synar	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	Y
3. Watkins	N	N	N		Y	N	Y	Y	N	N	N	Y	Y
4. McCurdy	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	Y
5. **Edwards**	Y	N	N		N	—	—	Y	Y	Y	N	N	Y
6. English	Y	N	N		Y	N	Y	Y	N	N	N	N	Y
OREGON													
1. AuCoin	—	—	—		—	—	—	Y	Y	Y	N	Y	Y
2. **Smith**	Y	N	N		N	Y	N	Y	N	N	N	N	Y
3. Wyden	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N

VOICE VOTE

State, district Representative	Issues voted on (see key)												
	1	2	3	4	5	6	7	8	9	10	11	12	13
4. Weaver	—	—	—	VOICE VOTE	—	—	—	Y	Y	Y	—	Y	N
PENNSYLVANIA													
1. Foglietta	—	—	—		—	—	—	Y	Y	Y	Y	Y	N
2. Gray	A	F	—		—	A	—	Y	Y	Y	Y	—	—
3. Smith	—	—	—		—	—	—	Y	Y	Y	N	—	N
4. **Dougherty**	—	—	—		—	—	—	N	N	N	N	Y	—
5. **Schulze**	Y	N	N		N	Y	N	Y	N	N	N	—	Y
6. Yatron	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	Y
7. Edgar	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
8. **Coyne, James**	Y	N	Y		N	Y	Y	Y	Y	Y	N	Y	Y
9. **Shuster**	Y	N	N		N	Y	N	Y	Y	Y	N	Y	Y
10. **McDade**	Y	N	Y		N	Y	Y	Y	Y	Y	N	Y	Y
11. **Nelligan**	Y	N	Y		N	Y	Y	Y	N	N	N	Y	Y
12. Murtha	—	—	—		—	—	—	Y	N	N	N	Y	Y
13. **Coughlin**	Y	N	Y		N	Y	Y	—	Y	Y	N	Y	Y
14. Coyne, William	N	Y	Y		Y	N	Y	N	Y	Y	N	Y	N
15. **Ritter**	Y	N	N		N	N	Y	Y	N	N	N	Y	F
16. **Walker**	Y	N	N		N	Y	N	Y	Y	Y	N	N	Y
17. Ertel	N	Y	Y		Y	N	Y	—	Y	Y	—	—	—
18. Walgren	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
19. **Goodling**	Y	N	Y		N	Y	N	Y	Y	Y	N	Y	Y
20. Gaydos	—	—	—		—	—	—	Y	N	Y	N	Y	N
21. Bailey	N	Y	Y		Y	N	Y	Y	N	N	N	Y	Y
22. Murphy	N	Y	Y		Y	N	Y	Y	N	Y	N	Y	Y
23. **Clinger**	N	Y	Y		N	Y	N	Y	N	N	N	Y	Y
24. Marks	—	—	—		—	—	—	Y	—	—	—	—	Y
25. **Atkinson**	—	—	—		—	—	—	Y	N	N	N	Y	Y
RHODE ISLAND													
1. St. Germain	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
2. **Schneider**	Y	Y	Y		N	N	Y	Y	Y	Y	Y	Y	Y
SOUTH CAROLINA													
1. **Hartnett**	Y	N	N		N	Y	N	Y	N	N	N	Y	—
2. **Spence**	Y	N	N		N	Y	—	Y	N	N	N	Y	Y
3. Derrick	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
4. **Campbell**	Y	N	N		N	Y	—	Y	N	N	N	Y	Y
5. Holland	N	Y	Y		Y	Y	—	—	N	N	N	Y	Y
6. **Napier**	Y	N	N		N	Y	—	Y	N	N	N	Y	Y
SOUTH DAKOTA													
1. Daschle	N	N	Y		Y	N	Y	N	Y	Y	N	Y	N
2. **Roberts**	Y	N	N		N	Y	N	Y	Y	Y	N	—	—
TENNESSEE													
1. **Quillen**	Y	N	N	VOICE VOTE	N	Y	N	N	N	N	N	Y	Y
2. **Duncan**	Y	Y	Y		N	Y	N	Y	N	N	N	Y	Y
3. Bouquard	N	Y	Y		Y	N	Y	N	N	N	Y	Y	F
4. Gore	N	Y	Y		Y	N	Y	Y	N	Y	Y	Y	N
5. Boner	Y	Y	Y		Y	N	Y	Y	N	N	N	—	Y
6. **Beard**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
7. Jones	Y	N	N		Y	Y	N	Y	—	—	N	Y	Y
8. Ford	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
TEXAS													
1. Hall, Sam	Y	N	N		Y	N	Y	Y	Y	Y	N	Y	Y
2. Wilson	N	Y	Y		Y	N	Y	—	—	N	N	Y	Y
3. **Collins**	Y	N	N		N	Y	N	Y	N	N	N	N	—
4. Hall, Ralph	N	Y	Y		Y	N	Y	Y	N	N	N	Y	Y
5. Mattox	—	—	—		—	—	—	Y	Y	Y	—	—	—
6. Gramm	Y	N	N		Y	Y	N	N	N	N	N	N	Y
7. **Archer**	—	N	N		N	Y	N	Y	N	N	N	N	Y
8. Fields	Y	N	N		N	Y	N	Y	N	N	N	N	Y
9. Brooks	N	Y	Y		Y	N	Y	N	N	N	—	—	—
10. Pickle	Y	Y	Y		Y	N	Y	Y	N	Y	—	—	—
11. Leath	Y	N	N		Y	N	Y	Y	N	N	—	Y	Y
12. Wright	N	Y	Y		Y	N	Y	Y	N	Y	N	Y	Y
13. Hightower	Y	N	Y		N	Y	Y	Y	Y	Y	N	Y	Y
14. Patman	Y	N	Y		N	Y	Y	Y	N	N	N	Y	Y
15. de la Garza	Y	Y	Y		N	Y	Y	Y	N	N	N	Y	Y
16. White	N	Y	Y		Y	Y	Y	Y	N	N	N	Y	Y
17. Stenholm	Y	N	N		N	Y	N	Y	N	N	N	N	Y
18. Leland	A	F	—		—	A	—	Y	Y	Y	Y	Y	N
19. Hance	Y	Y	Y		N	N	N	Y	N	N	N	—	N
20. Gonzalez	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
21. **Loeffler**	Y	N	N		N	Y	N	Y	N	N	N	N	Y
22. **Paul**	Y	N	N		N	Y	N	N	Y	Y	N	N	Y
23. Kazen	Y	N	Y		N	Y	Y	Y	N	N	N	Y	Y
24. Frost	N	—	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
UTAH													
1. **Hansen**	—	—	A		—	—	A	Y	N	N	N	Y	Y
2. **Marriot**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
VERMONT													
Jeffords	N	Y	Y		N	Y	Y	Y	Y	Y	Y	Y	—
VIRGINIA													
1. **Trible**	—	—	—		—	—	—	Y	N	N	N	—	Y
2. **Whitehurst**	Y	N	N		N	Y	N	N	N	N	N	Y	Y
3. **Bliley**	Y	N	N		N	Y	N	N	N	N	N	Y	Y
4. **Daniel, Robert**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
5. Daniel, Dan	Y	N	N		N	Y	N	N	N	N	—	Y	Y
6. **Butler**	Y	N	N		N	Y	—	N	N	N	—	—	F
7. **Robinson**	Y	N	N		N	Y	N	N	N	N	N	Y	Y
8. **Parris**	Y	N	Y		N	Y	Y	Y	Y	Y	N	Y	Y
9. **Wampler**	Y	N	N		N	Y	N	N	N	N	N	Y	Y
10. **Wolf**	Y	N	Y		N	Y	Y	Y	N	N	N	Y	Y
WASHINGTON													
1. **Pritchard**	Y	N	Y		N	Y	—	Y	Y	Y	—	—	—
2. **Swift**	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	Y
3. Bonker	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
4. **Morrison**	Y	N	Y		N	Y	N	Y	N	N	N	Y	Y
5. Foley	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	Y
6. Dicks	Y	Y	Y		Y	N	Y	Y	N	Y	N	Y	N
7. Lowry	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	N
WEST VIRGINIA													
1. Mollohan	N	Y	Y	VOICE VOTE	Y	N	Y	—	N	N	N	Y	N
2. **Benedict**	Y	Y	Y		N	Y	N	Y	Y	Y	N	—	N
3. **Staton**	Y	N	N		N	Y	N	Y	N	N	N	Y	Y
4. Rahall	N	Y	Y		Y	N	Y	Y	Y	Y	N	Y	N
WISCONSIN													
1. Aspin	N	Y	Y		Y	N	Y	N	Y	Y	Y	Y	Y
2. Kastenmeier	N	Y	Y		Y	N	Y	Y	Y	Y	Y	Y	Y
3. **Gunderson**	Y	N	N		N	Y	N	Y	Y	Y	Y	Y	Y
4. Zablocki	N	Y	Y		N	N	Y	Y	Y	Y	N	Y	—
5. Reuss	N	Y	Y		Y	N	Y	Y	Y	Y	A	—	A
6. **Petri**	Y	N	Y		N	Y	N	Y	N	N	Y	Y	Y
7. Obey	N	Y	Y		Y	N	Y	N	Y	Y	Y	Y	N
8. Roth	Y	N	N		N	Y	N	Y	Y	Y	N	Y	Y
9. Sensenbrenner	Y	N	N		N	Y	N	N	Y	Y	Y	N	Y
WYOMING													
Cheney	Y	N	N		N	Y	N	N	N	N	N	N	Y

a Sworn in July 15. b Sworn in July 12.